

**REMARKS**

Claims 1-4 and 6-15 are pending. By this Response claims 1, 6 and 11 are amended. Reconsideration and allowance in view of the above amendments and following remarks are respectfully requested.

Claims 1, 6, 10 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eggert, Jr. (US 4,267,895) in view of Nelson et al. (US 6,131,681) and claims 2-4, 7-9, and 12-14 stand rejected in view of Eggert, Nelson, and Ishida et al. (US 6,705,865). These rejections are respectfully traversed.

In the Office Action, in response to Applicant's previous arguments, the Examiner states that "the claims do not recite the size of the filter and this may not be read into the claims." In response Applicant has amended independent claims 1, 6 and 11 to specifically recite the type of filter as being one that filters particulate matter. Filtered air being supplied directly to the internal components of the engine would a filter that removes particulate matter from the air.

Claim 1, recites, *inter alia*, a powertrain of a vehicle having wheels, the powertrain comprising a thermal engine having an output shaft, which when required can be mechanically connected to at least one of the wheels for driving the at least one of the wheels, an energy storage device, an electric motor, which is mechanically connected to the thermal engine or to the at least one wheel and which is electrically connected to the energy storage device and is supplied with electric power from the energy storage device for supplying or receiving mechanical power or torque when required, wherein at least part of filtered air from an air filter which filters particulate matter and supplies filtered air to the thermal engine is redirected to pass in such a way that at least some internal parts of the electric motor will obtain cooling from the filtered air.

Claim 6 recites, *inter alia*, a powertrain of a vehicle having wheels, the powertrain including a thermal engine and an electric motor for selectively driving at least one of the wheels, the electric motor comprising: an inlet for receiving filtered air from an air filter which filters particulate matter and supplies filtered air to the thermal engine; and channels for receiving said filtered air and directing the filtered

air to pass in such a way that at least some internal parts of the electric motor will obtain cooling from said filtered air.

Claim 11 recites, *inter alia*, In a vehicle having wheels and a powertrain including a thermal engine and a electric motor for selectively driving at least one wheel of the vehicle, a method of cooling the electric motor comprising: passing a flow of air to the thermal engine through an air filter which filters particulate matter and produces filtered air; and providing at least part of the filtered air from the air filter to the inside of the electric motor to provide cooling thereof.

Thus, each of claims 1, 6 and 11 when referencing filtered air references air in which particulate matter has been removed.

In contrast, Nelson teaches a filter used on the grill of a car as a winter front so as to restrict super cold air from entering the engine. Nelson's filter is only used during cold winter conditions only and is not designed to always be used and is not designed to reduce dust and fine particles from entering the internal motor parts, let alone internal electric motor parts. Nowhere does Nelson teach such a filter is used to supply air to internal parts of the engine and/or filter particulate matter.

Further, Applicant respectfully submits that the Examiner has not addressed Applicant's arguments concerning the lack of teachings in Eggert and Nelson of redirecting airflows to the internal parts of the engine. The Examiner seems more concerned with the filter itself, addressed by the amendments, and has not responded to Applicant's arguments concerning the air flow beyond providing the same worded rejection on which Applicant's arguments assert the deficiencies therein.

Applicant respectfully submits that the combination of teachings from Eggert and Nelson fail to teach or suggest any type of specific filtered air flows beyond standard engine compartment air flows. Eggert only teaches an airflow that is partially redirected to pass over an electric motor. The airflow in Eggert is directed to both a thermal part of the engine and an electric part of the engine, but this teaching does not address the claimed features of directing the airflow so that it is made to pass some internal parts of the electric motor. At best Eggert teaches that the air flows over

the compartmental area of the electric motor, but there is no teaching that air flow is directed to the specific internal parts of the electric motor.

Nonetheless, Applicant respectfully submits that at least by the amendments to the claims, the teachings of Eggert and Nelson in combination fail to teach each and every feature of independent claims 1, 6 and 11 as required.

With respect to the dependent claims, Applicant respectfully incorporate the arguments presented in the Response dated November 12, 2009. These arguments are reproduced below.

Ishida is provided allegedly teach the features of “air cooling around motor windings, permanent magnets, and rotor/stator” (page 4 of the office action). Applicant submit that Ishida discloses a design to improve the cooling of what obviously is a generator for a 12 V DC system in a conventional car (alternator). It has stator windings 34 and 34R and a rotor without permanent magnets but with a DC activated armature coil 32 in the rotor. The rotor armature coil is fed over two slip ring brushes. By adjusting the armature current, the output voltage can be kept at a desired value for all speeds over a certain lower limit.

Ishida does not have to worry about sand, dust and other pollutants being supplied by the air streams “a” and “b” passing the stator coil 34R. The voltage over the stator coils are suitable to charge a 12 V battery and are therefore in the order of 17 volts peak to peak, phase to phase and some 10 V peak over one phase.

The traction motors in a hybrid have coils fed by a battery of some 200 to 600 volt over switch transistors that causes the coil voltage to switch from, for example, +400 V to – 400 V in a fraction of a microsecond. This causes ringing that increases the peak voltages with some 50%. Pollution of surfaces is not a problem for the 10 V phase voltage of Ishida. It would be a major problem for a traction motor with 600 V peak over its coils.

As Ishida’s machine is a generator, it will not generate any current unless it runs at a considerable speed. It can therefore use a fan assembled on its own shaft. If

it is rotating slowly there will not be much air pressure, but no current and therefore no stator coil heating.

A traction motor powering a car uphill in a traffic congestion has to supply lots of torque at no or very low speed. It therefore requires a cooling system that is independent of its own speed.

Essentially Ishida teaches a fan at the end of a stator coil of an alternator that is used to provide a general cooling air flow. This airflow is neither filtered or directed to pass some internal parts of an electric motor in the context of the claimed features. One of ordinary skill in the art would not look to Ishida's teachings related to an alternator to be applied with an electric motor as part of a powertrain of a vehicle. They are not analogous in terms of design, function or use.

Thus, in view of the above, applicant respectfully submits that the combination of Eggert, Nelson and Ishida fail to establish a prima facie obviousness of dependent claims 2-4, 7-9 and 12-15.

Applicants respectfully submit that the combination of elements as set forth in claims 1-4, 6-10 and 12-15 is not disclosed or made obvious by the prior art of record, for the reasons explained above. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

### **Conclusion**

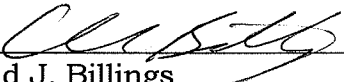
For at least the above reasons Applicants respectfully submit claims 1-4 and 6-15 are distinguishable over the cited art. Favorable consideration and prompt allowance are earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad J. Billings, Registration No. 48917 at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

By   
Chad J. Billings  
Registration No.: 48917  
BIRCH, STEWART, KOLASCH & BIRCH, LLP  
8110 Gatehouse Road, Suite 100 East  
P.O. Box 747  
Falls Church, VA 22040-0747  
703-205-8000